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Pamphlet 385–5

FUNDAMENTALS OF SAFETY IN ARMY SPORTS AND RECREATION

Headquarters
Department of the Army
Washington, DC
15 November 1981

UNCLASSIFIED

SUMMARY of CHANGE

DA PAM 385–5
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FUNDAMENTALS OF SAFETY IN ARMY SPORTS AND RECREATION

By Order of the Secretary of the Army:

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Chapter 1
ACCIDENTS IN ATHLETIC AND RECREATIONAL ACTIVITIES

1–1. Purpose and Scope.

a. Sports and recreation are an integral part of the American way of life. They provide a basic process through which the Army can help build and maintain an effective fighting force.

b. For many years, the Army has recognized the value of sports and recreational activities in improving morale. By providing servicemen with recreational opportunities equivalent to those in civilian life, the Army can maintain the high level of troop morale essential for efficiency.

c. Sports and recreational activities also develop leadership and team spirit. The soldier encounters many conditions in sports activities similar to conditions in combat. In athletic competition, the qualities of teamwork, personal courage, confidence, aggressiveness, and determination are developed to a high level. As in combat, however, some of these same qualities may lead to injuries and deaths if pursued to the point of foolhardiness. If accidents and injuries are to be prevented, the fine line between courage and recklessness, determination and undue stubbornness must be determined. Proper supervision, effective instruction, appropriate training, and thorough planning can help prevent both athletic and recreational accidents. This pamphlet is intended to support Army-wide efforts toward safety in athletic and recreational activities.

1–2. The Accident Problem.

a. Throughout this publication, the phrase "sports and recreation" will include sports, physical training, and recreational activities. Recreational activities include non-physical related activities as well as physical related, e.g., recreation centers, arts and crafts or library activities. Each of these topics will be explained and discussed in the following paragraphs. Methods and techniques for preventing accidents will be presented in the remaining chapters.

b. Sports and recreational accidents rank second only to privately owned motor vehicle accidents as a major cause of accidental injury. Sports and recreational injuries cost the Army millions of dollars each year through the loss of man-years of work. Combat effectiveness is directly weakened by the loss of skilled personnel.

c. Data on sports and recreational injuries to Army personnel are available for disabling injuries and fatalities only. Obviously, there are many nondisabling injuries. Research shows that the most common types of injuries are minor bruises, cuts, and strains, However, a high frequency of minor injuries in an activity increases the likelihood that more severe injuries will follow.

d. Sports and recreational activities can be classified as either team activities or individual activities. In figure 1-1, accidental injuries to Army personnel for a typical 24-month period are classified separately for these two categories under supervised and unsupervised categories.

e. Football, including touch football, has the highest percentage of disabling injuries among supervised team sports; baseball, basketball, and snow and ice sports follow in that order. This high incidence of touch football injuries is due to—

(1) Lack of protective clothing or equipment.

(2) Poor conditioning of participants.

(3) Inadequate ability of participants.

Usually the best players are selected for tackle football teams, while participants of varying skill levels take part in touch football. Also, many more persons take part in softball and basketball than in football. Yet, football leads in accidents. So called "combat football" produces by far the largest number of injuries when exposure is considered. These injuries tend to be more severe as well.

f. Although statistics show only a few disabling injuries in supervised individual sports, some of these activities are potentially dangerous; they can result in severe injury or death. Boxing is an example.

g. In unsupervised team sports, basketball leads as shown in figure 1–1. It is closely followed by football, baseball, and softball. After these "big four", the frequency of injuries is much lower. This is probably because many more people participate in the "big four" than in the others.

h. Among unsupervised individual sports, swimming, boating, skindiving, sports parachuting, and hunting have the highest fatal injury potential. Snow and ice sports are the next greatest contributor to injuries in this category. These injuries have increased sharply over the past few years because of increased popularity.

	1978			1979		
Supervised	*INJ*	*FAT*	*Days lost*	*INJ*	*FAT*	*Days lost*
Baseball/Softball	144		2,168	166		2,929
Basketball	81		1,370	100		1,191
Soccer, Rugby, Kickball	29		588	39		725
Combat Football	6		60	12		321
Football	67		1,242	74		1,352
Football (Touch)	109		1,916	103		1,565
Handball				5		121
Other Team Sports	25		559	9		120
PT, Confidence Course, etc.	282	1	4,987	264		3,982
Volleyball	49		920	40		568
Boating	1		1	2		9
Boxing and Wrestling	15		228	13	1	82
Other Individual	5		60	5		20
Snow and Ice Sports	71		1,491	46		664
Swimming, Skin Diving	3	4	53	5	1	82
TOTAL SUPERVISED	887	5	15,643	883	2	13,731
Unsupervised						
Baseball/Softball	72		914	98		1,441
Basketball	112		1,411	139		1,948
Bowling	1		90	5		25
Football	108		2,028	127		2,202
Handball				4		29
Other Team Sports	5		29	1		40
Volleyball	23		237	21		346
Boating	13	11	187	6	10	158
Boxing and Wrestling	24		713	31		514
Hunting and Fishing	29	3	726	21	12	482
Skin Diving		2	2	1	4	8
Snow Ski	33		457	31		589
Snow and Ice (exclude ski)	12		109	5		82
Sport Parachute	48	2	1,443	30	4	786
Swimming	46	32	1,152	48	32	1,374
Other Individual	2		15	7		108
Other Recreational (Horseback riding, climbing, skating, camping)	169	12	3,067	150	2	2,499
Tennis	6		79	3		110
Track	1		3	0		0
Water Ski	8	1	141	3		17
Physical Conditioning	26	1	477	17		241

Figure 1-1. Recreational accidents by activity.

Unsupervised	*INJ*	*1978 FAT*	*Days lost*	*INJ*	*1979 FAT*	*Days lost*
Hobbies/Craft Shop, etc.	11		82	16		212
Racket/Paddleball	38		571	40		326
TOTAL UNSUPERVISED	787	64	13,933	804	64	13,537

Figure 1-1. Recreational accidents by activity.—Continued

1–3. Accident Causes.

To prevent sports and recreational accidents, we must understand the causes of such accidents. Figure 1-2 depicts one view of accident causation. The figure brings out several important facts.

a. Not all accidents and preventable. Because of physical contact, it simply is not possible to prevent all injuries and still maintain the character and value of the game.

b. Most accidents have many causes. These causes should be viewed in terms of errors at the operating level, in supervision and management, and in the contributing safety program.

c. Since many factors contribute to the cause of an accident, a good accident prevention program will be directed at control of several sources. Generally speaking, remedial measures directed at management and supervisory problems have greater impact and more lasting effect than those directed at operating level problems. The goal is a balanced accident prevention program that uses the most effective and economical combination of accident prevention measures.

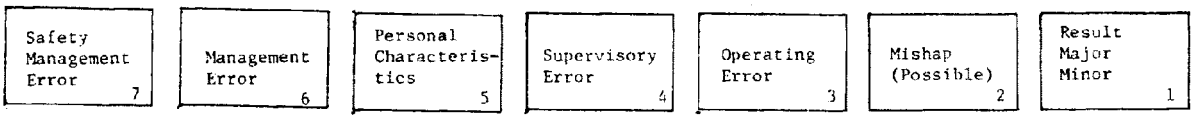

Figure 1-2. Accident causation process.

1–4. Identifying Accident Causes.

a. A typical accident. Using the model of accident causation (fig. 1-2) as a guide, let us look at a typical accident and get a firm idea of the nature of accident causes and the chances for their control.

b. Result. The result represents the loss occurring because of an accident. As shown in the model, results are, to some extent, the product of luck. An individual running, in any sport, may trip and fall. Most times, the fall will cause no injury. On occasion, however, the fall will cause injury or even death. An injury or the lack of an injury and the severity of an injury are the result of causes. But these causes are practically impossible to detect at the point of result. Because of this, with one major exception, little accident prevention activity can take place at this point. The major exception is limiting the extent of injury through fast, skilled, first aid treatment. Proper first aid at the scene of the accident, for example, can limit tissue damage, or nerve damage as in the case of a broken neck. It can contribute to the rapid, complete recovery of the injured.

c. Mishap. At this point an unintended event has occurred, but it has not yet produced an injury. There are limited opportunities to intercede at this point with the use of protective equipment, crowd control, and playing surface layout. For example, a baseball player lets a bat slip out of his hands. The chances of an injury resulting from this mishap are greatly reduced if spectators have been kept at a safe distance from the playing area.

d. Operating errors. An operating error is a mistake made by a participant that has the potential to cause a mishap. The failure of softball players to "call" fly balls is a good example. Because of this failure, players might collide while chasing fly balls (mishap) and some might be injured (result). Typically in sports, operating errors are skill deficiencies (improper sliding), rule violations (illegal blocking), or poor practices (swimming alone).

e. Supervisory errors. There are errors made by supervisory personnel responsible for supervising sports and recreational activities or for preparing personnel to participate in unsupervised activities. Examples are the failure of coaches to provide essential skill training, to properly condition participants, or to establish safety-related procedures. Similarly, failure to keep play within the rules or to insure a safe playing area are supervisory failures.

f. Management errors. These are errors made by policy-making personnel, typically at installation level. The failure

of the commander to provide time for progressive physical training in strenuous sports is an example. So is the failure to require safety training for officials. Failure of the Morale Support Activities (MSA) Office to provide proper facilities and equipment maintenance is another. As shown in figure 1-2, these management failures cause the supervisory and operating failures that ultimately produce mishaps and injuries.

g. Safety management errors. These are failures of the safety program to provide suitable technical advice and safety program support to management. These results in errors by management, Figure 1-3 depicts this causation sequence in a common sports accident. Note that some steps in the analysis require independent investigation and verification.

Result—Broken jaw

Mishap—Collision with another player while chasing a flyball.

Operating Error—Failure of players or team leader to "call" the fly.

Supervisory Error—Poor coaching on this point. Failure to reinforce the need.

Management Error—Failure to train coaches or provide proper training time.

Safety Management Error—Failure to demonstrate the need for such training.

Figure 1-3. Application of accident causation process.

Chapter 2
RESPONSIBILITIES—THE UNIFIED APPROACH

2–1. The Unified Approach.

The most effective means of preventing sports and recreational accidents is through the coordinated, unified effort of all involved Army agencies, units, and individuals. The success of the accident prevention effort depends on the degree to which the following steps are carried out in establishing a program:

a. Organization.

b. Select and train an adequate number of personnel to accomplish the task.

c. Identify specific accident problems and determine the causes.

d. Develop and implement corrective measures to prevent recurrences.

e. Constantly reevaluate and update the program.

2–2. Command Leadership.

a. Safety is a command responsibility. Commanders at every level should conduct a continuous, vigorous accident prevention program. This includes safety in sports and recreational activities, Commanders must be sure that appropriate safety provisions are included in all directives, standing operating procedures, and training doctrine. Further, the commander is responsible for the following:

(1) Assuring proper planning for safety in the sports and recreational program.

(2) Establishing and applying safety codes and standards of safe performance.

(3) Reporting accidents and maintaining records of accident experience.

b. Commanders must insist that all supervisors of sports and recreational activities under their jurisdiction coordinate their procedures with other activities and units. This is necessary to insure a sports and recreational safety program for the total installation.

2–3. The Army Safety Program.

a. The Army supports a decentralized safety management system with emphasis at the installation level. However, there are provisions for central policy development, program control and direction, and evaluation. The Safety Division of the Office of the Deputy Chief of Staff for Personnel (ODCSPER) is responsible for the following:

(1) Overall staff supervision of all Army safety activities.

(2) Coordination with Army Staff agencies and major Army commands (MACOMs) on matters relating to safety management.

b. An integral part of the mission of ODCSPER is the collection, tabulation, and analysis of all Army accidents, worldwide. Compiling accident information on sports and recreational activities is basic to the total Army effort. This is done at the US Army Safety Center. Also basic to the total effort is the following:

(1) Dissemination of information on current developments in accident prevention techniques.

(2) Distribution of educational and safety promotional materials to Army installations and commands worldwide.

(3) Provision of specific information on new activities and the potential hazards of these activities.

2–4. Installation Safety Office.

a. All MACOMs and most installations have safety offices staffed by professional safety specialists. The installation safety director assists the commander by advising on safety matters and by managing the safety program at installation level.

b. The safety director also maintains liaison with all functional agencies having safety duties. An example is the sports and recreational program of the MSA Office. The safety director —

(1) Acts in an advisory capacity.

(2) Assists in determining general safety requirements in an agency's specific activities.

(3) Supplies pertinent information on accidents at the installation level as well as Army-wide.

(4) Provides technical competence to help interpret and use accident data correctly and to keep an agency's preventive program sound.

2–5. Morale Support Activities (MSA) Office.

a. Sports and recreational activities on the installation are primarily the responsibility of the Morale Support Officer (MSO). The MSO's mission is to provide personnel with wholesome and meaningful activities for their leisure time.

b. The primary function of the MSO is supervisory. He or she provides guidelines for overall sports and recreational programming on the installation. The overall objective is a safe, balanced program of sports and recreation. Specific areas where the MSO has principal responsibility are covered in more detail in chapter 6.

c. In developing the scope of the sports and recreational program, the following factors must be considered:

(1) Geographical location, size and mission of the installation.

(2) Post population served including such factors as the number and type of personnel.

(3) Funds available.

(4) Needs and desires of personnel.

d. A survey and evaluation of the local situation should be the first step in programming. Only those sports and recreational activities for which adequate, safe facilities and equipment are available should be scheduled. In general, if more on-post activities are provided, more people will participate. As a result, less Army personnel will have the opportunity to indulge in unsupervised, off-post activities where accident potential is greater.

e. Some sports and recreational facilities not available at the installation may be found in local communities. The MSO should insure that such facilities are adequate from a safety standpoint prior to arranging for Army personnel to use them.

f. The MSO should maintain close liaison with the installation safety director's office, unit safety officers, and supervisors of sports and recreational activities. He should carefully analyze information on accident prevention in sports and recreational activities received from the safety director's office. If the information is appropriate for use at unit level, the MSO should coordinate with the safety director to insure dissemination to units. Broad and continuing communication among various segments of the overall accident prevention program is a must. This is necessary if the program is to be maintained at the optimum level.

2–6. Unit Safety Officer.

a. The success of the program depends largely on the efforts of the unit safety officer. He or she must implement an imaginative and comprehensive accident prevention program. (See DA Pamphlet 385-1, Unit Safety Management.) Strong support by the unit commander, however, is essential for program success; hence, the unit safety officer must seek and obtain the commander's support. Commanders should delegate the unit safety officers the authority to direct appropriate actions relating to safety.

b. The unit safety officer must insure that sports and recreational activities follow the scheduling, inspection, requirements, and recommendations of the MSO. The unit safety officer should check closely with supervisors in his unit to be certain that only qualified personnel in proper physical condition participate in the more strenuous activities. He or she should also check to be certain that such personnel maintain a high degree of physical conditioning.

c. The unit safety officer must insure that guidelines provided by competent authority are practiced during physical training drills. He must see to it that all unit sports and recreational facilities and equipment are inspected regularly and maintained in safe condition.

d. The unit safety officer should hold safety meetings to discuss safe practices in sports and recreational activities. In addition, safety information should be passed on to all personnel in two other ways.

(1) Orally, through the supervisors who should be well represented at safety meetings.

(2) In print, through educational and promotional materials received from the MSA Office and the installation safety director's office.

2–7. Supervisors.

A person in charge of other persons is a supervisor. All supervisors have some degree of safety responsibilities. In most sports activities, officials and coaches are supervisors. Supervisors responsible for conducting physical training, sports, and recreational activities must insure the safety of these activities. Army personnel who are guides for tours organized for the military community and sponsored by the Information, Tour, and Travel Office are responsible for the safety and health of the tour group; they are, in effect, supervisors. Automotive crafts staff personnel who oversee the use of machinery and equipment by patrons are supervisors responsible for enforcing safety procedures. Supervisors interpret management policies to operational personnel and see that work is performed efficiently and safely. Supervisors must first be trained in techniques important in preventing accidents, such as enforcement of the rules, teaching fundamentals, and physical and mental conditioning. Then they can assume responsibility for conducting physical training, sports, and recreational activities. Personnel in supervisory positions should use this pamphlet and other publications in their areas to acquire necessary accident prevention knowledge. Supervisors desiring a broader approach to general accident prevention should enroll in US Army Subcourse 45, Safety in Sports, Recreation, and Physical Training.

2–8. Medical Corps Personnel.

Army physicians, medical corpsmen, and nurses are responsible for giving physical examinations to prospective participants; they are obligated to restrict persons with functional defects. Medical personnel should acquaint themselves with the particular physical requirements for each sport and recreational activity. Such personnel should distribute medical information on the frequency of specific kinds of injuries associated with sports, physical training, and recreational activities. Information on seasonal hazards of a medical nature (e.g., poison ivy in spring and summer) which relate to recreational activities should also be provided.

2–9. Summary.

Safety in sports and recreation requires the coordinates participation of many personnel. The MSO, the safety manager, unit safety officers, and supervisors are the key players in coordinating the efforts of this unified team.

Chapter 3
SAFE FACILITIES AND EQUIPMENT

Section I
FACILITIES

3–1. The Life-Cycle Concept.

a. Safe facilities and equipment are important to safe sports and recreational activities. Planning for safe facilities and equipment should begin as soon as it is determined that a certain sport or recreational activity will be conducted on the installation.

b. Figure 3-1 depicts a life-cycle concept of safety for the provision of safe equipment and facilities. It begins appropriately at the concept and planning stages. At this time, morale support, safety and facilities engineering personnel review the availability and suitability of alternative locations and facilities. Similarly, it is at this point that consideration should be given to various necessary support arrangements. These may include the following:

(1) Type and number of items of protective equipment needed.

(2) Safety standards these items should meet.

(3) Plans for placing these items within the facility or for controlling their issuance.

c. Startup is the next life-cycle phase. Morale support, safety and facilities engineering personnel should monitor the construction or modification of facilities and the installation of equipment. Safety personnel should monitor the initial use of the facility or equipment to insure the implementation of safety plans. This close scrutiny is a wise precaution because hazards overlooked in the planning stage often become evident when the actual operation is observed. In many respects, this startup procedure can be viewed as a pilot project used to explore any safety-related problems that may arise.

d. The primary problem during the operations stage is the proper maintenance of facilities and equipment. They must be kept up to appropriate standards and used for the purposes intended. Periodic inspections and surveys are the

usual methods for determining the level of maintenance. This effort is usually seasonal for each sport and should be continuous year after year.

e. The final phase is the shutdown stage. During this stage, safety personnel are concerned about properly securing and disposing of equipment. They must be sure that potential hazards have been controlled. Also, that the facility is properly prepared for future use.

f. The life cycle concept insures appropriate safety precautions from the time a sports or recreational idea is conceived until it is finally laid to rest. This concept applies even to already existing sports and recreational activities since it is possible to enter the process at any point.

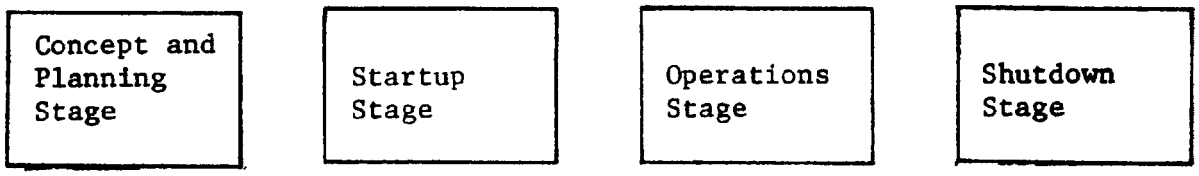

Figure 3-1. The Life Cycle Model

3–2. The Concept and Planning Stage.

Morale support and safety personnel will save time and expense in the operations stage by investing considerable time in the planning stage. It is almost always better and less expensive to get it right from the beginning than to fix it up later. Some of the specific safety considerations appropriate to the planning stage are shown below:

a. Funding.

(1) Is enough money presently available to provide suitable, safe facilities?

(2) Are funds likely to be available in subsequent years to assure proper, safe conduct of the activity including adequate maintenance?

(3) Have budgeting and supply operations been properly coordinated to insure time availability of safety-related equipment and supplies?

b. Facility.

(1) Will the activity be compatible with adjacent activities?

(2) Have all applicable safety standards been identified?

(3) Are published standards available for use? A checklist of some important facility and equipment related safety requirements is at appendix A.

(4) Does the selected facility meet minimum safety standards or has it already been altered to meet them?

(5) Have engineering solutions (i.e., removal, relocation) been planned whenever possible in lieu of temporary "fixes" such as posting warning signs?

(6) Have arrangements been made for continuing maintenance of the facilities?

3–3. The Startup Stage.

a. If the planning stage has been accomplished effectively, the subsequent stages are made much easier. Work in the startup stage can be based on the work done during the planning stage. The startup stage consists largely of insuring that what has been planned is actually being done. The major factors to be evaluated during startup evaluations, surveys, and inspections are shown below.

(1) *Funding.*

(a) Have anticipated funds actually been made available and are they being used for designated safety purposes?

(b) Is there continued assurance of availability of funds for future operations?

(2) *Facilities.*

(a) Is the activity interfacing effectively with adjacent operations or do adjustments need to be made?

(b) Does the facility meet minimum safety standards? Have required modifications been properly made and are they effective in limiting hazards?

(c) Is the maintenance capability adequate and does the facility reflect good maintenance?

(d) Are SOPs relating to control of facility-related hazards being observed? Do the SOPs provide safety requirements for all activities? Example: Chlorination of swimming pools.

b. A key to success in the startup stage is frequent, intensive surveys of the new activity. The startup period is a

particularly hazardous one because errors and oversights in the planning stage have the potential to cause accidents. Intensive direct observation during the startup stage can detect these potential problems before they produce loss. Active safety participation in the planning stage coupled with close observation and management of the startup stage can contribute more than any other action to years of accident free operation.

3–4. The Operation Stage.

a. The operation stage involves the long-term monitoring of facilities for sustained adherence to safety standards. Sports and recreational activities vary greatly in the frequency and severity of hazards. Therefore, the MSO and safety manager should carefully plan this long-term surveillance program for maximum effect and economy. The safety manager allocates more effort to hazardous operations than to less hazardous operations. He or she also considers the seasonal aspect of planning. Each seasonal sport or recreational activity is targeted before the season begins. It is then monitored rather heavily at the start of the season.

b. Year-around activities are monitored based on the degree of hazard and the frequency of past accidents. The existence of a schedule assures that each facility will receive the proper amount of attention based on available resources and seasonal factors. Checklists are also excellent management aids to safe facilities. These can be derived from various standards or codes or can sometimes be obtained from various sporting associations. See DA Pamphlet 385-1 for checklists. Once established, such standards can be updated or strengthened as needed. All such checklists or standards must meet the minimum requirements prescribed by competent authority such as Occupational Safety and Health Act (OSHA) standards, National Fire Codes, or Army regulations. Experience also dictates the need for continuing emphasis on maintaining and enforcing good housekeeping standards. (See app A.)

3–5. The Shutdown Stage.

a. Normally, no particularly severe hazards are associated with shutting down an athletic or recreational facility. Certain precautions to prevent property damage may be needed if the facility is not to be used for another activity. These include securing the entrances, special fire prevention activities, and other steps needed to safeguard personnel and the facility.

b. One particular problem associated with facilities that are to be closed and then demolished is the supervision of normal maintenance. Facilities must meet minimum safety and health standards until the end of the final day of operations. Morale support supervisory personnel should, therefore, be alert to see that these essential maintenance services are maintained as long as required. They should coordinate such services with the facilities engineer.

Section II
SAFE EQUIPMENT

3–6. General.

Morale support and safety personnel are concerned with two broad categories of equipment The first is the equipment used in a sport (e.g., weight sets, balls, tennis rackets, golf clubs, horseshoes.) The second are the various kinds of personal protective equipment (PPE) (e.g., supporters, masks, and padding used in sportevents). Also included in this category are such items as goggles, respirators, and earmuffs used for woodworking, automotive repair, arts and crafts shops, and similar activities. All of this equipment must be available to participants in suitable quality and quantity. Every item of equipment should be maintained in a condition that enables it to perform its functions.

3–7. The Planning Stage.

Careful planning is essential for providing safe equipment as well as safe facilities. Equipment necessary to accomplish the mission must be identified; how this equipment will be used and maintained must be determined. Appendix B contains a selected listing of common sports and recreational PPE. During the planning stage, the morale support and safety staffs, as a team, can do much to insure the provision of safe equipment in the startup and operations stages. The end result will be fewer accidents. The following areas should be considered during the planning stage:

a. Funding.

(1) Is enough money available to provide proper safety-related equipment and supplies?

(2) Are funds likely to be available in subsequent years to assure proper conduct of the sport or recreational activity?

(3) Will the supply and budgeting process provide the items when needed and in the quality and quantities desired?

b. Equipment.

(1) Has the necessary safety-related equipment been identified? Have quality standards been designated? Have required items been ordered in a timely manner?

(2) Have requirements for use of protective equipment been specified in SOPs and rules, or otherwise published? (See app A)

(3) Are maintenance procedures satisfactory, including provisions for sanitizing items such as shoes or masks?

(4) Have procedures for control and issuance of safety-related equipment been developed that permit easy access to the equipment, yet maintain accountability for it?

(5) Have provisions been made for periodic outside surveillance of equipment to insure standards are being maintained?

(6) Are all repairs to equipment made by those trained in such repairs, avoiding "jury rigged" temporary fixes?

3–8. The Startup Stage.

a. The key task in startup are insuring that the planned procedures are actually implemented and are adequate to insure safety. Equipment related considerations during the startup phase are listed below.

(1) Is all required equipment on-hand and does it meet established standards?

(2) Where appropriate (e.g., weight rooms, trampoline areas, craft shops) have rules relating to equipment use been posted?

(3) Are participants aware of and following the rules for use of equipment?

(4) Do storage and issue procedures provide an optimum tradeoff between control and ease of access for participants?

(5) Does a check of maintenance procedures and the equipment indicate a satisfactory maintenance program?

b. As in the case of facilities, the startup period is critical. During this phase, oversights in planning can cause accidents unless they are quickly detected and corrected. Extra time invested at this stage will be more than compensated for by reduced accidents during sustained operations.

3–9. The Operation Stage.

a. Equipment is particularly vulnerable to wear or damage to the extent that it can become hazardous. Accordingly, the morale support and safety personnel will want to insure the inspection of equipment often enough to assure adherence to minimum standards. Equipment surveys can be combined with other surveys (e.g., facility surveys) for more efficiency. The management objective is to visit each activity often enough to insure satisfactory equipment use and maintenance without making excessive visits that waste valuable time.

b. Proper equipment maintenance is also closely related to proper use by day-to-day users. Operating instruction posted on complex equipment, training, and close supervision can prevent equipment abuse. They can also be a key accident prevention measure. A key control device used to limit access to hazardous equipment in a craft ship is an example. Potentially dangerous apparatus, such as trampolines, can be similarly secured against use by untrained, unsupervised personnel.

3–10. The Shutdown Stage.

No major equipment problems should occur in the shutdown stage as long as minimum maintenance standards are maintained. But often, old equipment is not replaced during the last months. Whatever is available is used. After shutdown, this old equipment may be given to intramural teams or unsupervised activities. Before any such arrangements are made, it should be assured that the equipment meets minimum safety standards and that it will be maintained at those standards in future use.

Chapter 4
INDIVIDUAL ASPECTS OF SPORTS AND RECREATIONAL SAFETY

4–1. General.

a. All sports contain an element of danger. Most involve extreme physical exertion, physical contact, and quick decisions followed by fast action. In the heat of play, inherent hazards characterizing sports competition often lead to accidents. Compounding these inherent hazards are the problems of improperly controlled sports and physical training. These can lead to accidents through overexertion, improper performance, and related factors already covered.

b. Research studies indicate that 20 percent of sports accidents could be eliminated by the use of adequate equipment controls. Thirty-one percent could be eliminated through effective leadership. Equipment control is easy to bring about. Effective leadership is much more difficult; it involves the human element—security the cooperation and support of participants.

c. Many Service members will continue to be injured in sports activities and physical training. Research has given some answers to the questions of how and why they will be injured.

(1) Some participants have hidden defects. The most prevalent are defects of the spine which can lead to serious injury. Until injury strikes, many spinal imperfections cause no pain. Young persons thought to be healthy sometimes suffer grave injuries because of hidden ailments. Some of these are high or low blood pressure, diabetes, damaged heart valves, damaged kidneys, and weak blood vessels. These must be identified through careful physical examination before personnel take part in active sports.

(2) Other participants are often in poor condition as a result of long layoffs, overweight, or loss of timing. They are often seriously injured from the lack of proper physical conditioning and warm up prior to participation.

(3) Some participants are simply not built for specific sports. For example, the exceptionally fast, small person may be able to score touchdowns in football, but might sustain fractures when tackled by a heavy lineman.

(4) Other participants do not have a clear understanding of the rules. As a result, they commit unsafe acts that endanger themselves and others.

(5) Still others lack the skill necessary to participate safely. Swimmers and sky divers are among those who frequently try to progress too rapidly. They exceed their capabilities and get in trouble as a result.

(6) Finally, there are individuals who have an attitude of poor sportsmanship. This shows itself in acts like cheating, sneak punching, and piling on. These people think that doing their best to win somehow involves doing their worst in the form of illegal and unsportsmanlike acts.

d. Given the above factors, the ultimate safe participants in sports and recreational activities are persons physically sound for the activity. They are in suitable physical condition and compete on an appropriate physical level. They also know the rules and have the skills to play the game correctly. They have an attitude of good sportsmanship and fair play even in the heat of the battle. The sports and recreational safety program has the goal of producing such persons.

4–2. Producing a Safe Participant—Medical Aspects.

Periodic health examinations for those taking part in more strenuous sports and physical training are of the utmost importance. Supervisors of physical training and sports activities must understand the value of these examinations.

a. The physical examination should be conducted under the supervision of a medical officer. If trained medical personnel or competent trainers are available (e.g., installation contact sport teams usually have a trainer for wrapping joints, administering massages, etc.), they should assist the medical officer in giving the examination. They could measure strength and motor ability, visual acuity, weight, and pulse fluctuation. The supervisor of the physical training program and coaches should receive a statement from the medical officer of a person's physical limitations. The value of the physical examination is to give a clear understanding of the physical status of each participant. It should be used to eliminate unfit personnel. Physical training supervisors should interpret the physical limitations of each person by identifying activities which will not be harmful, Records of physical limitations should be maintained in a file which is readily accessible to all physical training supervisors and coaches. When a person is transferred, the record of physical limitations should be transferred with the health record.

b. There should be at least one physical examination before a person engages in an activity for the first time. After this, examinations should be given as necessary in individual cases. Supervisors and coaches must observe participants carefully on a daily basis to obtain a day-to-day knowledge of their physical status. When the condition of a participant is doubtful, the supervisor or coach should require a physical examination prior to continued participation. After an extended illness, a person should always be reexamined before being permitted to engage in an activity.

c. Supervisors and coaches may notice signs that indicate unnatural conditions which participants may not have revealed about themselves. An example may be an unusual sagging of the shoulders or an inadequate response to commands. Any unnatural condition should disqualify a person from further participation until a favorable report is received from a medical officer.

d. All examinations should cover carefully those body areas which are exposed to the greatest stress and strain (e.g., in football, knee and ankle joints are most susceptible to injury). Particular care should be used in examining infection centers. It is important that medical examiners be familiar with the physical requirements of each sport and the more rigorous aspects of physical training. With this knowledge they can restrict specific activities for those persons who have conditions which might make them susceptible to injury or aggravation of an old injury.

4–3. Producing a Safe Participant—Physical Conditioning.

a. FM 21–20 identifies three distinct stages of physical conditioning. It stresses the necessity of progressing through all three stages in a step–by step manner. These stages are shown below. Note that it takes a person who is not conditioned about 8 weeks of planned training to become conditioned. FM 21–20 emphasizes that most sports activities, and all vigorous activity, should be conducted only in the sustaining stage or late in the improvement stage.

(1) *Stage 1.* Toughening Stage—2 weeks.

(2) *Stage 2.* Slow Improvement Stage—6 to 10 weeks.

(3) *Stage 3.* Sustaining Stage—indefinite.

b. The MSO or the safety manager is not responsible for producing good physical condition in troops. That is clearly a command responsibility. Rarely, if ever, will those who supervise Army sports and recreational activity be able to take personnel through an 8-week toughening program before they participate in a sport. It is best to sustain all troops at the appropriate standard outlined by the Army Physical Fitness Evaluation Program for their age and physical profile. The operational benefits are obvious. The benefits in the sports program and in the total safety program are also clear. A well-conditioned person is less likely to be injured on or off the job than one who is not physically fit.

c. Programs for producing a physically fit soldier are outlined in detail in FM 21–20. It should be a major objective

of the morale support and safety staff to promote the kinds of programs contained in FM 21-20. These programs could be major contributions to both their organizational goals and objectives.

4–4. Producing a Safe Participant—Matching.

Classification of participants on the basis of their physical needs and abilities is essential.

a. In accident rates, there are sufficient examples to indicate that classification is a sound safety control. Accident rates decrease in those activities where classification is instituted. For example, if nonswimmers are separated from swimmers, adequate pool supervision is achieved; consequently, safety is more adequately assured. Such grouping also makes instruction easier since all members of a particular skill-level group need and receive the same instruction. Beginning swimmers are an example. Classification assures adequate progression of skill development; thus, it promotes program continuity. This is also an aid to safety, since participants are not permitted to attempt activities beyond their capabilities.

b. No single classification factor will meet all the safety needs of all activities. All factors must be considered before allowing a person to participate in individual or group activities. Many activities have a single factor that is particularly significant to safe participation. For example, weight is a significant factor in wrestling; participants should, therefore, be grouped by weight.

c. While classification by weight is generally recognized in wrestling and boxing, it is not so generally recognized in other sports activities. An example is football, where weight is probably just as important, Some colleges do recognize this and maintain team based on weight. They have a team for those under 150 pounds, a team for those between 150 and 165 pounds, and a team for those who weight 165 pounds or more. Grouping by ability levels is why many schools and colleges now have junior varsity squads in addition to varsity. Players with less skill play on the junior varsity and against their equals. Army installations would profit by similar classification of participants in certain activities.

d. Permanent or temporary defects are another basic type of classification. The average soldier is physically fit at the time of induction. However, temporary defects do occur and some become more or less permanent in nature. Defects should be considered in relation to the activities in which participants desire to engage. A medical officer, in consultation with the supervisor or coach, should prescribe the types of activities and exercises permitted to a person with defects. Activities and exercises should be selected on the basis of their remedial benefits.

e. Care should be taken so that smaller persons are not barred from a chance to compete solely on the basis of size when their total physical ability and skill may enable them to compete successfully. Many physically small people have shown the ability to stand out in competition with bigger people without excessive injury. The decision when to match is clearly a supervisory responsibility that requires judgment and flexibility bearing in mind the need to protect the participants.

4–5. Producing a Safe Participant—Knowing the Rules.

Rules have two basic purposes: prescribing playing procedures and banishing excessive unsafe activity.

a. Often the assumption is made that everybody knows the rules for games like baseball, softball, volleyball, and touch football. But few people in the country know all the rules even for baseball, the national sport. Safety in most sports depends on adherence to selected safety-related rules.

b. To get the maximum practical safety in sports, participants must be taught enough of the rules so that play can progress in an orderly and safe manner. This should not be a difficult task because the safety-related rules are relatively few. The rules should be stressed through repetition and strict enforcement, particularly early in the season when playing habits are being fixed. Accidents that occur due to lack of knowledge of the rules are clearly the result of a supervisory failing.

4–6. Producing a Safe Participant—Skill Development.

In addition to a knowledge of the rules, a knowledge of selected skills is essential for the safe conduct of many sports. In baseball or softball, for example, calling fly balls could prevent most of the very frequent injuries caused by collisions between two players. Correct sliding technique is another example of a skill critical to safe performance. Each sport and recreational activity has similar critical skills. Supervisors are responsible for making these skills known to participants.

4–7. Producing a Safe Participant—Attitudes.

Adequate supervision can prevent most sports and recreational accidents. However, many sports and recreational programs do not have enough supervisory personnel to watch all participants every minute. Therefore, the support of all participants is essential to accident prevention.

a. Promoting safety attitudes. Most people obey rules they understand. They are much less likely to obey rules they do not understand or do not see the need for. If the sports supervisor or coach simply presents a list of safety "do's" and "don'ts" and does not explain the logic behind the rules, people will frequently ignore them. Because they want to participate in sports, most people will obey safety rules when supervisors convince them that compliance with the rules is a prerequisite to participation.

(1) An established safety philosophy among participants will encourage the acceptance of safety requirements in

other activities. These include driving a vehicle or enjoying leisure time in off-post recreational activities. Coaches and supervisors are in excellent positions to develop knowledge of, and respect for, general safety principles which they can apply to everyday experiences. This will contribute to and affect the total installation safety program.

(2) Coaches and supervisors can also help develop respect for safety rules by setting good examples. Officials and opponents should be treated fairly and with respect. The desire to win an athletic contest should never overshadow safety requirements. Any selfish desires of the individual must always be subordinated to team interest.

b. Promoting self–discipline. In addition to learning and following safety rules, participants must also learn to govern their emotions since external authority and control are not always present.

(1) To develop personal responsibility for safe performance, participants must be given opportunities to plan, execute, and evaluate their own conduct. One method of accomplishing this is to have participants assist in developing a safety code and safety rules. Under guidance from coaches and supervisors, they can devise regulations designed to eliminate unnecessary hazards. They can also compensate for specific hazards which cannot be eliminated, but which can be recognized.

(2) In addition, participants should be encouraged to help enforce the rules. Coaches and supervisors should carefully select people with leadership ability or potential or others whom they feel will benefit from the experience. They can then assign them responsibilities for inspecting equipment and facilities, helping beginning participants learn basic skills, and supervising certain sports activities.

4–8. The Life–Cycle Concept.

The life-cycle concept applies to persons as well as facilities and equipment. Control over the hazards associated with each of the six individual aspects of safety should begin in the planning stage. Control should then be sustained through the startup, operations, and shutdown stages. Use of this life-cycle concept insurer, early detection of problems and sustained control over them during the entire course of a program.

Chapter 5
RECREATIONAL ACTIVITIES

5–1. General.

a. The primary concern thus far has been the sports and physical training aspects of the program. Yet many techniques and methods already presented will also apply to the recreational aspects set forth here. A basic distinction between the two aspects of the total program is the function of supervision. The sports aspect is subject to supervision by coaches, officials, and other persons, and involves fewer participants. The recreational aspect is comprised of spontaneous activities which involve little or no supervision. It is much more difficult to control such activities and to plan and implement accident prevention measures for them.

b. Recreational activities may be further subdivided into two categories. There are those offered on-post and those engaged in by Army personnel off-post during free hours. The accident involvement of Army personnel in off-duty recreational activities has reached serious proportions, as noted in the first chapter.

c. The American people, including Army personnel, now take greater advantage of recreational opportunities than ever before. Cars enable people to travel long distances in short periods of time. This, in turn, generates a serious accident problem. (For a complete discussion of this problem, see the USAIA Subcourse 42, Traffic Safety Management.) Manufacturers of recreational equipment highly publicize various forms of recreation. Too many people, unfortunately, dive headlong into a recreational activity without preparing for it.

5–2. Types of Recreational Activities.

a. Many activities are participated in on an impromptu, unsupervised basis, both on- and off-post. There are outdoor activities such as horseshoes, volleyball, badminton, and shuffleboard. There are indoor activities such as table tennis, darts, billiards, and many others.

b. Some recreational activities that occur on-post and during off-duty time do require close supervision. These include for the most part, technical shop activities such as woodworking, automotive, lapidary, photography, ceramics, and other arts and crafts activities. Some of these may be conducted in recreation centers. Some of these activities also receive considerable participation by dependents as well as by military personnel. For example, summer youth activities programs could result in the presence of numerous young people.

(1) Technical shop activities frequently have numerous industrial type safety and health hazards. These include the following:

(a) Respiratory hazards or air contaminants (dusts, vapors, mists).

(b) Hazards to the eyes, face, head, and extremities from flying objects, chips, shavings, glare, liquids, chemicals, acids, solvents, sparks, flames, and steam.

(c) Noise hazards.

(d) Hazards to the hands and feet from cuts from sharp edged tools, saws, blades, and falling objects.

(2) The checklist at appendix A contains some requirements and procedures to help minimize hazards involved in technical shop and similar activities. Some additional controls necessary to prevent accidents to personnel are as follows:

(a) Clear cut rules and SOPs for use of all machinery, power tools, and equipment must be prepared and posted conspicuously. This includes posting of operation instructions on machinery.

(b) All supervisors and staff personnel must thoroughly understand all rules and be qualified to operate appropriate machinery, power tools, and equipment. This is absolutely necessary not only to enforce rules, but also to be able to instruct patrons on how to operate the equipment and to detect unsafe use of such items as well.

(c) Permission to use hand and power tools and equipment will not be granted until qualified MSA personnel have personally instructed prospective operators on safe operation and are certain of the capability of prospective operators to operate the items. In some specialized skill development facilities, persons are also required to qualify for and carry DA Form 3031 (Qualification Card for Use of Arts and Crafts Center Equipment) in accordance with AR 28-1. In all facilities where hand and power tools or equipment may be used, periodic classes will be conducted by qualified staff personnel to insure safety.

(d) Warning notices (e.g., danger and caution signs, posters, and stickers) will be conspicuously posted in designated hazardous areas. Such notices will also be affixed on dangerous equipment and machinery.

(e) MSA personnel will enforce all rules to include wear of PPE where required. No horseplay will be permitted.

(f) All machinery, equipment, and power and hand tools should be inspected daily for proper maintenance and serviceability. Items not meeting standards should never be used.

5–3. Safety Information for Specific Activities.

a. The accident potential of off-post recreational activities can be minimized in two ways. A large number of on-post recreational activities can be made available to attract personnel away from off-post ones. Also, safety information can be distributed on various recreational activities. Specific information should be publicized just before and during the summer months when swimming is a basic activity. Where equipment to support activities such as scuba diving, water skiing, and hunting is checked out from the MSA Equipment Checkout Center, users may be required to demonstrate proficiency in its use. This may be a prerequisite to obtaining the equipment. Also specific *written* instructions should be provided. Complete written instructions on boat operations to include emergency procedures, safety rules, and use of life preservers and other equipment, should be furnished and explained to the users. Department of the Army, US Army Safety Center, and MACOM safety materials provide specific safety information for a variety of recreational activities. They also furnish sources from which further information can be obtained. These items must be fully exploited.

b. In setting forth approaches for effective accident prevention, noncompetitive sports activities can be generally classified as recreational activities. Since recreational activities, by their nature, do not lend themselves to close supervision and instruction, other methods of safety education and accident prevention must be used. Installation personnel with safety responsibilities must make full use of installation communications media.

Chapter 6
SPECIAL RESPONSIBILITIES OF THE MORALE SUPPORT ACTIVITIES OFFICE

6–1. General.

Support services constitute a varied and often complex part of the overall sports and recreational program. Because of the many staff elements involved, getting the support services program off the ground requires careful planning and execution. Again, the life–cycle concept should be applied. A program of support services should be developed at the planning stage. It should be followed through the startup, operations, and shutdown stages. As shown in figure 6–1, the MSO is responsible for at least seven major support services. Each has a definite place in the overall program and each requires careful management.

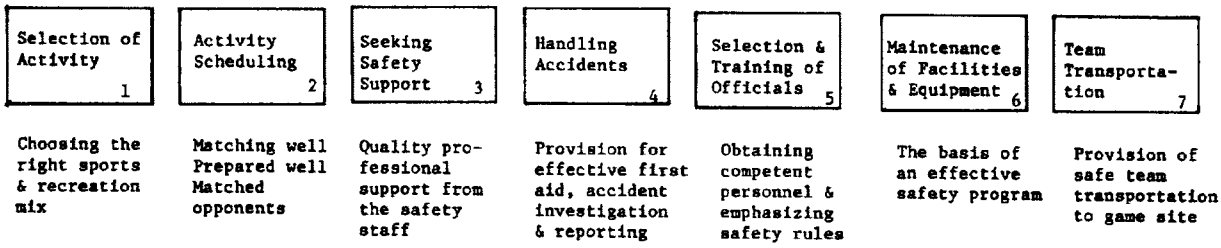

Figure 6-1.

6–2. Selection of Sports Activities.

FM 21–20 lists a variety of physical conditioning activities designed to meet most every need. The activities in FM 21–20 are not intended to be a restrictive listing. Commanders have the prerogative to develop new activities when they see an advantage in doing so. Each commander or supervisor who does choose to innovate in this manner should bear in mind the following factors:

a. Does the new activity or modified activity produce something of value that an already-existing activity doesn't?

b. Have adequate safety measures been developed for the new activity?

c. Is the new activity compatible in a safety sense with existing facilities?

d. Have provisions been made to monitor the new activity over time for safety impact?

Developing all supporting functions, especially safety, is an integral part of developing any new activity.

6–3. Activity Scheduling.

a. Many schools and colleges continue the practice of scheduling unequal athletic competitions. These automatically create hazardous situations. This practice is particularly prevalent in football. To insure well matched teams, installation commanders and coaches should compare their record of past performances with that of their potential rival. This will result in fewer injuries among participants and probably make a more exciting game for spectators.

b. Too often there is a tendency among coaches in competitive sports to work participants too hard, too long, and too often just to build a winning team. This, coupled with a tight schedule of games and lengthy practice sessions, can lead to chronic fatigue and loss of participants' strength and endurance. Such poor coaching and supervision inevitably causes accidents and injuries plus the contraction of infections and diseases by players with weakened physical condition.

c. Installation commanders must see that supervisors and coaches adopt standards and policies to govern the scheduling, frequency, and length of practice sessions. This can be done through the installation MSA Office. A committee of morale support personnel, supervisors, coaches, and other interested persons can be of value in developing and implementing standards and policies.

d. Sufficient practice and conditioning time must be provided to assure proper physical conditioning and preparation for play. Scheduling should extend several days or weeks before the first game to assure plenty of time for these preparations.

6–4. Selection and Training of Officials.

a. The selection and training of competent officials is a vital safety factor. This is a most effective safety service, since officials are directly responsible for the safety of players while games are in progress. While participants must receive instructions in fair play from coaches and supervisors, officials must maintain this attitude in the contest.

b. Rules are basic and essential aspects of any athletic contest. A primary purpose of many rules is to reduce both unnecessary hazards and unsafe actions by participants. To obtain the most personal protection from the rules, strict enforcement is mandatory. Coaches, supervisors, and morale support personnel should constantly train and evaluate officials for competency and effectiveness.

c. Intramural contests and physical training conditioning drills are often held without benefit of certified, competent officials. In such cases, leaders should be selected to officiate at such contests and drills. These leaders should be thoroughly trained in their duties and should be closely supervised. The supervisor should impress on these officials the importance of keeping the contest and drills under positive control at all times. This is one of the most important elements in any Army installation sports program.

d. It is important for safe play that officials fully appreciate their key role in maintaining safety in the sports activities they officiate. This safety consciousness must be created by morale support and safety personnel working

together. They should provide training, orientation, written materials, and a system of effective accountability. The question of inadequate or ineffective officiating should be raised in the investigation of every sports accident. A determination should be made as to the role officiating may have played in the accident.

6–5. Team Transportation.

Transportation of athletic teams to and from contests and practice areas is a matter of utmost importance. It can create many problems if not properly handled. Well in advance of athletic events requiring motor vehicle transportation, the MSO should prepare a list of such events. He or she should then request necessary transportation from the installation transportation officer. Several days before such an event, the MSO should check with the transportation officer to insure that proper vehicles with licensed military drivers will be ready to pick up the team. The installation commander and the MSO should insure that only bonded public common carriers are used for long trips (e.g., air, bus or train travel). Generally, participants should not be allowed to use their own private vehicles to transport themselves to athletic contest sites away from their installation. Transportation of athletic teams in private vehicles has resulted in some of the worst accidents experienced by Army athletic teams.

6–6. Maintenance of Facilities and Equipment

a. As discussed in chapter 3, a key aspect of safety in sports and recreation is the proper maintenance of facilities. Sports involving large playing areas (football and soccer fields) or those involving sophisticated maintenance, such as gymnasium floors, require thorough maintenance programs. A football or baseball field, for example, should be kept well turfed and free of rocks, sticks, standing water, and objects that could cause falls or other injuries. This means periodic inspections and a good deal of work by maintenance crews to maintain acceptable standards. Gymnasium floor maintenance involves selection of waxes, frequent sweeping, and other time-consuming procedures. These activities demand resources that must be furnished and managed. The facility engineer usually has responsibility in these areas. Coordination with him or her is vital to insuring success of facility maintenance.

b. A second aspect is equipment maintenance. Since many items used in sports and recreational activities are commercially purchased items, maintenance can often be a major problem. For example, a weight set may have a collar lost or stolen. Using the set without the collar to restrain the weight is very dangerous, but often the only way to get replacements is to order them from the original supplier. This means that catalogs and parts listings on all commercially purchased items should be kept in a central location for easy access.

c. It is also necessary to insure that funds and a reasonably rapid procurement system are in place. Keeping key items of unserviceable equipment out of service for long periods is wasteful. It also creates a temptation to use it "just a little" even though it may be unsafe in some way. All maintenance procedures should be systematized and made known to all activity supervisors. The maintenance status of equipment and facilities should be a special item of interest on inspections and surveys. Maintenance status can be used as an indicator of the overall quality of the safety program since it is so clearly a management and supervisory responsibility.

6–7. Accident procedures.

a. Definite procedures should be developed for handling accidents. Coaches and supervisors should be instructed in these procedures. They should also be thoroughly trained in giving first aid.

b. Accidents should be reported through formal channels to higher authorities for Army-wide tabulation of accident data. Also, accident information should be used at the installation level to develop remedial techniques for preventing future accidents. Procedures for completing and submitting DA Form 285 (Accident Report) are in AR 385–40.

c. Maintaining and using accident records is an essential safety service. Accident prevention efforts are not complete unless accident records are maintained and used to prevent further accidents. Analysis of accident records should help pinpoint causes and indicate the steps necessary to prevent similar accidents. The installation safety director, using statistical data from the Army Safety Management Information System will be of great assistance in this project.

d. In addition to helping select specific steps to prevent accidents, summaries of accident records can also be used for the following:

(1) Highlight the most significant accident problems.

(2) Assist in selecting subject matter for safety instruction as an integral part of the sports and recreation program.

(3) Discover what safety information, habits, skills, and attitudes are most needed by specific groups of participants.

(4) Select ways to motivate participants to perform safely.

(5) Use accident experience in stressing safety to participants when they are most receptive to safety teaching. That is, immediately after accidents occur.

(6) Aid in evaluating the effectiveness of safety instruction.

(7) Make changes in the structure and use of equipment and facilities and in the rules governing specific sports and recreational activities.

(8) Isolate areas which require specific attention during accident prevention surveys and inspections.

6–8. Supporting Installation Safety Services.

Safety in sports and recreational activities is the responsibility of the chain of command advised by the MSO. The MSO should be well trained in accident prevention procedures since sports and recreational activities are the second leading source of injuries on a typical installation. Among the services that should be periodically requested by the MSO from time to time are the following:

a. Inspections and surveys. These should be in support of the ongoing inspection activity of the MSA staff. The safety staff will normally spot-check operating sports and recreational activities. These checks are to insure that training facilities, supervision, and maintenance programs are all working smoothly and effectively.

b. Accident investigations. Normally, accident reports are prepared by the activity supervisor. In addition, the safety staff frequently will conduct separate or supplemental investigations of serious or unusual accidents that seem to involve special circumstances or problems.

c. Technical advice. As indicated in chapters 2 and 3, the safety staff should be involved in the planning stages of sports and recreational activities. This will enable the safety staff to contribute technical advice on layout, training, and procedures that can be extremely valuable to activity supervisors.

d. Safety material support. Under certain circumstances, the installation safety manager may provide various kinds of safety training or promotional materials intended to cope with major problem areas. This would be coordinated with the MSA Office. Potentially dangerous sports such as sports parachuting, motorcycle racing and motorcross events, shooting rapids in rafts and canoes, hang gliding, surfing, rappelling, and rock climbing are increasingly popular. It is essential that efforts be made to provide prospective participants with guidance on hazards and minimum safety precautions. Safety guidance normally can be obtained from existing safety publications or from various national and local associations and groups promoting these new activities. The safety staff must make use of existing communications media or devise new methods to get this data to those who need it on a timely basis. Active command support for the establishment of clubs has proven a successful technique for such sports as motorcycling, scuba diving, and sports parachuting.

6–9. Summary.

a. Safety services for participants is a basic part of an effective program in physical training, sports, and recreation. These services should be preventive in nature; that is, they should be undertaken before accidents occur. Health examinations, classification of participants, physical and mental conditioning, activity scheduling, selection and training of officials, and use of participants as safety leaders are some examples. These services help to minimize accident occurrence. Other services, such as reporting accidents and maintaining and using accident records are continuing support services. These use accident information to eliminate accident causes and to prevent accident occurrence or recurrence.

b. Installation MSOs, supervisors of physical training sports and recreational activities, and coaches and officials should be well-versed in accident prevention services. They should fully apply them as a basic part of the total program of physical training, sports, and recreation.

Appendix A
FACILITIES AND EQUIPMENT SAFETY CHECKLIST

This checklist contains operational safety requirements common to most MSA facilities. These requirements are derived from OSHA standards, Army regulations, and national fire and electrical codes. Detailed checklists for some specific recreational facilities and equipment can be found in DA Pam 385-1, Unit Safety Management.

A–1.
Are all facilities kept clean and orderly and in a sanitary condition?

A–2.
Are all floors, working places, and passageways kept free from protruding nails, splinters, holes and loose boards and tiles?

A–3.
Are all aisles and passageways kept clear and in good repair, with no obstructions across or in aisles that could create a hazard?

A–4.
Are smoking rules clearly established? Some general rules are as follows:

a. Smoking is prohibited in such locations or facilities as warehouses, attics, roofs and understructures, beds, theatres, gymnasiums, and auditoriums except in properly designated smoking areas.

b. Smoking is prohibited in battery charging rooms, paint shops and sheds, woodworking shops, photographic processing rooms, and in other areas that, because of prevailing conditions or operations, have required the posting of "No Smoking" signs.

c. Smoking is prohibited within 50 feet of flammable liquid storage areas.

d. Clearly visible, conspicuous "No Smoking" signs shall be posted in all areas when smoking is prohibited.

e. Designated smoking areas located within prohibited smoking areas shall be clearly and obviously defined. Appropriate signs will be posted ("Smoking Area," "Authorized Smoking Area," etc.) and borders will be marked or painted on the floor so that the authorized smoking area is readily and unmistakably identified.

f. Suitable receptacles for discarding smoking materials shall be provided in adequate numbers in all areas where smoking is permitted. Receptacles will be of noncombustible material and will not be used as wastebaskets.

A–5.
Are all trash, scraps, shavings, and other rubbish removed at the close of business of each normal working day or more often when necessary?

A–6.
Are all rubbish and scrap materials disposed of in properly identified and located noncombustible cans, bins, or receptacles? Are open top wastebaskets of metal or other noncombustible material? Are trashcans of noncombustible material and provided with metal covers?

A–7.
Do storage areas for flammable and combustible liquids meet fire and safety requirements?

A–8.
Are flammable and combustible liquids and materials used, stored, and dispensed properly? Are only approved containers used?

A–9.
Is a fire plan posted? Does the plan include responsibilities for specific actions and evacuation routes?

A–10.
Are sufficient numbers and types of fire extinguishers readily accessible and available in the event of a fire?

A–11.
Are fire extinguishers checked monthly to insure that they have not been actuated or tampered with and that there is no obvious physical damage, corrosion, or other impairments?

A–12.
Are fire extinguishers inspected annually by installation fire officials to determine if they require repair, recharging, or replacement?

A–13.
Do assigned personnel know how to operate fire extinguishers? Do personnel know what type of fire extinguishers to use for potential fires that could occur in the facility?

A–14.
Are exists clearly marked with readily visible exit signs? Are instructions to reach the nearest exit (i.e., the word "Exit" with a directional arrow) placed in locations where the direction of travel to reach the exit is not immediately apparent?

A–15.
Are "Not An Exit" or similar signs posted on doors, passageways, or stairways that are so located or arranged as to be possibly mistaken for an exit?

A–16.
Are exits so arranged and maintained as to provide free and unobstructed access? Are locks or fastening devices to prevent free escape from the inside of any building NOT installed?

A–17.
Are exits unimpeded or not blocked by any obstructions that would prevent full instant use in the event of a fire or emergency?

A–18.
Are electrical appliances (e.g., refrigerators, refrigerated water coolers, buffers, air conditioners) grounded? (Also see A-25.)

A–19.
Are electrical cords in good condition, e.g., not cracked, frayed, spliced, or with exposed wire? (Also see A-25.)

A–20.
Are faceplates (covers) in place over electrical outlets or switches?

A–21.
Are there sufficient electrical outlets available for necessary electrical appliances, equipment, and tools so as to avoid use of extension cords or plug adapters (gang-plugs)?

A–22.
Are explosion-proof lights used in hazardous areas, e.g., battery charging areas, spray paint booth, fuel storage areas?

A–23.
Are new facilities equipped with master control switches which turn off all power for use by supervisors in emergencies?

A–24.
Do all machines (saws, grinders, lathes, etc.) have required mechanical safeguards in place at all times?

A–25.
Are all hand held portable power tools (e.g., drills, sanders, grinders) properly grounded? Are electrical cords and attachment plugs in good condition?

A–26.
Are warning or danger signs posted in hazardous areas and by or on dangerous machinery? Examples are: "Caution, Noise Hazardous Area, Hearing Protection Required"; "Danger, Do Not Operate This Saw Without Permission From Woodshop Director"; or "Caution, Goggles Must Be Worn When Operating This Machine."

A–27.
Have rules and safe procedures been developed for use of machinery, power tools, tools, and equipment? Have rules and safe procedures been posted at each machine? Are shop supervisors enforcing the rules at all times?

A–28.
Are individuals required to demonstrate proficiency for using hand and power tools or equipment prior to being allowed to use such equipment? Are periodic classes conducted by qualified staff personnel to insure safety in facilities where hand and power tools or equipment are used?

A–29.
Is personnel protective equipment (PPE) provided in activities (e.g., woodworking, lapidary, automotive crafts, photography) where hazards in the forms of air contaminants, items that strike or irritate parts of the body, noise, and chemical or mechanical irritants exist? DA Pam 385–3, Protective Clothing and Equipment, provides a guide for the use and care of recognized PPE. Paragraph B–4, appendix B, contains brief descriptions of appropriate PPE.

A–30.
Do supervisors require and enforce the wear of PPE in areas which require PPE to be worn?

Appendix B
PROTECTIVE CLOTHING AND EQUIPMENT FOR SPORTS AND RECREATIONAL ACTIVITIES

B–1. Recreational Activities.

a. A considerable amount of work time is lost by military and civilian personnel from personal injuries received in various athletic and recreational activities during both on- and off-duty hours. Personnel who normally do not engage in strenuous athletic or recreational activities should realize that they are more susceptible to injuries than those who engage in strenuous daily training.

b. Everyone should use good judgment in choosing which contact sports to participate in and to what degree. Individuals should always use proper protective equipment to ward off unnecessary cuts, bruises, sprains, and broken bones.

c. For guidance in selecting the proper sports and recreational protective equipment, the following paragraphs list general and specific items available from Army supply channels and commercial sources.

B–2. General Protective Equipment for Athletic and Recreational Activities.

a. Brace, knee (fig. B-1). Made of fabric with hinged metal brace on both sides of leg, interchangeable right and left. Generally worn by participants who have had previous knee injuries.
Note: This should NOT be worn by individuals who do not have or not have had knee injuries as it tends to weaken the muscles of good knees.

b. Pad, knee (fig. B-2). Thick padded foam rubber encased in elastic covering. Protects knees from bumps and bruises in falls.

c. Supporter, knee (fig. B-3). A padded elastic knee supporter with rubber bound seams.

d. Eye/eyeglass protection. The following are used in sports where regular contact can be expected (e.g., football (touch), basketball, volleyball, soccer, handball/racquetball):

(1) *Eyeglass protector (fig. B-4).* Padded steel wire or plastic guard, head straps, adjustable. Used to protect eyeglasses.

(2) *Eyeglass holder (fig. B-5).* Elastic band that hooks to eyeglass ear pieces so glasses will not come off when hit or bumped, or slip off from sweat.

(3) *Protector's eye (fig, B-6).* Plastic guards with headstraps to protect eyes worn by players who do not wear eyeglasses as eye protection.

e. Protectors, face. Shaped plastic or shell protector designed to fit on various types of headgear or helmets; adjustable and covers nose, mouth, or jaw area.

f. Protectors, teeth (figs. B-7, & B-8). A rubber or plastic mouthpiece designed to fit snugly around upper and lower teeth to protect them against impact blows. Form fitted which can be made by a dentist are the best.

g. Supporter, ankle (fig. B-9). A one-piece, woven elastic ankle supporter with open heel and thin, rubber bound seams.

h. Supporter, athletic. A cup type supporter with woven mesh pocket jersey knit cup liner and elastic top band. Also available with metal or plastic cup for protection.

i. Supporter, elbow. A padded elastic elbow supporter to protect against bumps and bruises.

j. Supporter, wrist. An elastic wrist brace with rubber bound seams.

k. Wrap, ankle. A nonelastic cotton ankle wrap available in various widths and lengths up to 72 yards, with or without tie strings. For ankle supports and protection against sprains, cuts, scratches, and the like.

l. Wrap, bruise pad. A combination 3-inch elastic roller bandage and rubber pad, washable. Provides protection to accumulated bruises to prevent more serious injury.

B–3. Equipment for Specific Athletic/Recreational Activities.

a. Bicycling

(1) *Bell (or horn).* A hand-operating bell or horn to provide a warning to pedestrians and children.

(2) *Headlight.* A light to aid motorists and others in seeing a bicycle more easily at dusk or after dark.

(3) *Taillight, reflective tape.* A red, glass, plastic reflector, or reflective tape for mounting on rear fender of bicycle, end of axle, or spare reflectors on wheels to serve as a warning to motorists.

b. Football and rugby.

(1) *Glove, football (fig. B-10).* A one-piece, top padded covering to protect the hand and support the wrist, with two openings for thumb and fingers.

(2) *Guard, face.* A shaped plastic or steel guard designed to fit on football helmets to protect the entire face.

(3) *Guard, thigh.* A dome-shaped molded plastic guard encased between two layers of impact-absorbing, cellular material to protect thighs from bumps and bruises.

(4) *Helmet.* A one-piece molded plastic helmet with head suspension, crown padding, face guard, and cradle-type chin strap to protect head from impacts.

(5) *Pads, general.* As required, forearm pads, shoulder pads, knee pads, etc., to protect specific parts of the body.

(6) *Thigh pad.* A cup-shaped plastic pad with cellular pad on inside of cup for protection against impacts or sharp blows.

(7) *Pad, girdle (fig. B-11).* A stretch-type cloth and plastic pad for protection of the kidneys, femur, and spine.

(8) *Pad, rib.* A padded cloth or plastic guard suspended from the shoulders, with adjustable chest and back straps for proper protection.

(9) *Protectors, teeth.* A mouthpiece to prevent dental injuries.

c. Baseball and softball.

(1) *Shield, sun.* A plastic eye shield, tinted to protect against sunglare and worn with a baseball cap.

(2) *Guard, leg.* A molded corrugated guard for lower leg, padded at top and bottom, adjustable. Provides protection against impacts from thrown balls or bats and from spiked shoes. (Worn by catchers.)

(3) *Batting helmet and head protectors (fig. B-12).* A molded plastic or fiberglass, impact-type cap with leather covered sponge rubber sweatband and sponge rubber crown disc. Worn while at bat and on base to protect against a thrown or batted ball.

(4) *Mask, catcher's.* A welded wire or magnesium frame mask with cradle type head harness, padded around edge, mildew resistant. Protects face and head against impacts from balls and bats.

(5) *Pads, sliding.* Quilted synthetic pads for wearing over thighs and hips under uniform trousers. They are laced and have a tie-back waistband. Protects against injury when sliding into bases.

(6) *Protector, chest (catcher and umpire).* Heavy, reinforced quilted type, cellular rubber pad with arm loops, worn over chest and lower body, adjustable. Protects body against impacts from balls and bats. Models available for catchers or umpires. Appropriate chest protectors are available for female players.

d. Hockey.

(1) *Gloves, goalie.* Heavy padded gloves, ribbed for additional protection, gauntlet cuff, to protect hands and wrists against flying pucks.

(2) *Mask, face, goalie.* A molded and fitted plastic mask with provisions for good vision. This mask is used for protecting the face against flying pucks.

(3) *Pads, goalie.* Dome-shaped fiber pads encased in shock absorbing cellular material to protect lower body against flying pucks.

(4) *Pads, general.* A complete set of pads as required by rules.

(5) *Pads, shoulder.* A light-weight, shock absorbing pad to protect the shoulders from blows and falls.

(6) *Protector, chest.* Heavy, reinforced, quilted type, cellular rubber pad with arm loops, worn over chest and lower body, adjustable. It protects the upper body from flying pucks and sticks.

(7) *Protector, head.* A leather headgear with open top and fabric suspension to cover the sides of the head and the ears for protection against blows and falls.

(8) *Supporters, athletic with metal cup.* See paragraph B-2h.

e. Lacrosse.

(1) *Gloves.* A flexible glove with padded back and gauntlet cuff to protect hands and wrists against impact blows.

(2) *Guards, shin.* Same as baseball, guard, shin (para B-3c(2)).

(3) *Helmet.* A split crown helmet of laminated plastic with cutaway side area and large hole in top of crown; visor and chin strap. Foam vinyl padding throughout extends over the years to protect the head against impacts.

f. Boxing.

(1) *Gloves, boxing.* Soft leather gloves with roll cuff and hair padding, lace closure.

(2) *Protector head (fig. B-13).* One-piece leather head protector with openings for face and over ears, with open or closed top. It is used to protect head against severe blows.

(3) *Protector, teeth.* A fitted mouthpiece to protect the teeth.

(4) *Ring.* A properly padded ring to include floor, posts, and ropes.

(5) *Cup.* See paragraph B-2h.

h. Swimming.

(1) *Clip, nose.* A plastic or rubber metal clip for closing off the nostrils while swimming to prevent entrance of water.

(2) *Plug, ear.* A vinyl plastic or soft rubber plug for insertion in the ear cavity to prevent entrance of water. This ear plug should not be used when diving.

i. Basketball.

(1) *Eyeglass protection (figs. B-5 and B-6).* See paragraph B-2d.

(2) *Brace, knee; wrap, ankle, supporters: supporter, ankle; supporter, athletic; supporter, elbow; supporter, knee; supporter, wrist.* See paragraph B-2.

j. Automobile, pleasure driving.

(1) Door; safety locks.

(2) Sunglasses: spectacle or glasses, clip-on.

(3) Safety belts (front and rear).

(4) For winter driving: snow tires or tire chains.

k. Sailing, boating, and canoeing.

(1) Sunglasses: spectacle or glasses, clip-on

(2) Shoe, canvas, crepe sole.

(3) Vest, life preserver for each person on boat.

l. Motor boating. In addition to the items in k above, the following should be included:

(1) Can, safety, flammable, liquid.

(2) Extinguisher, fire CO_2 type.

(3) Indicator, combustible gas, portable.

(4) Horn or warning device.

(5) Anchor and hooks.

m. Snowmobiling. Helmet, sunglasses, appropriate clothing for crosscountry travel.

n. Skiing. Bindings, automatic release.

o. Shooting. Ear protection.

p. Outdoor sports/recreation (Hiking, camping, fishing, etc.).

(1) Snake bite kit.

(2) Flashlight

(3) Survival gear, appropriate to season.

B–4. Equipment for Specific Technical Shop Facilities/Activities.

The items listed below are not all inclusive. They are extracted from DA Pam 385-3 and CTA 50-900. Both publications should be referred to for complete information concerning PPE.

a. Respirator, air filtering, paint spray. A half-mask facepiece with particulate-removing filters and organic vapor cartridges for protection against paint spray mists and vapors.

b. Face shield, industrial, hinged window. An adjustable, clear or tinted plastic face shield mounted on a head frame. Available in different thickness for varying degrees of impact. Use is for personnel engaged in grinding, light chipping, or other tasks requiring a protective shield.

c. Goggles, eyecup, protective, chippers and grinders. A close-fitting industrial goggle with flat, impact-resisting lenses. Use for personnel engaged in grinding or chipping operations in lieu of a face shield.

d. Welder's helmet. Black fiber welder's helmet with fixed lens retainer and adjustable fiber head suspension without filter or cover plates, Use for general welding operations.

e. Aural protector. Sound (Ear Muff). Made of rigid plastic ear cups lined with foamed plastic or rubber with adjustable spring-type headbands. Use for personnel exposed to hazardous noise level. Also useful when frequency of removal is desired.

f. Plug, Ear Hearing Protective, Universal. Made of rubber or plastic and designed to fit into the outer portion of the ear canal. Use is when the bulk of the earmuff is undesirable.

g. Apron impermeable: Duck, rubber coated, black. A full body apron made of cotton duck rubber coated, with shoulder straps and waist ties. Use is to protect clothing and skin when working with water, steam, acids, solvents, alkalis, and caustic solutions.

h. Apron, Welders: Leather, bib straps. Use is for individual involved in contact with hot sparks, molten metal, flying chips, rough objects, edged tools, etc.

i. Gloves: Plastic coated, impermeable, gauntlet cuff, oil and acid resistant. Use is for personnel working with live steam, water, acids, or caustics, where protection is required against bums, irritation, and dermatosis, such as steam cleaning, sandblasting, and operations where oil is an irritant.

j. Mittens, cloth, asbestos. An asbestos mitten with wool lining, gauntlet cuff, Use is for handling hot molds or other hot objects by welders, blacksmiths, heat treaters, furnace operators, etc.

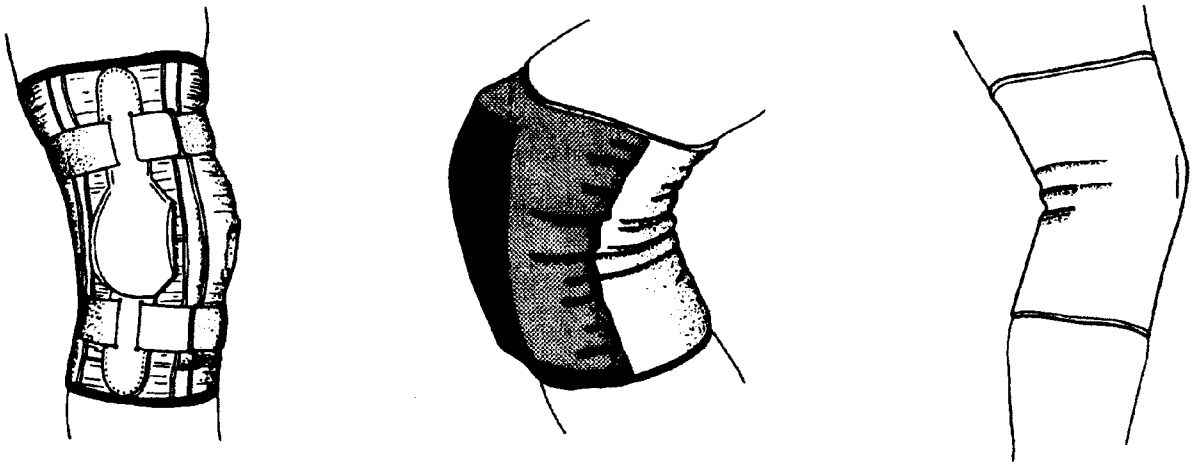

Figure B-1 THROUGH B-3. Brace, Knee; Pad, Knee; Supporter, Knee

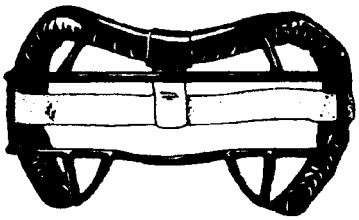

Figure B-4. Eyeglass Protector

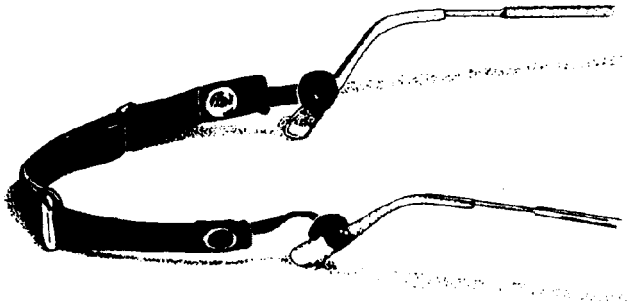

Figure B-5. Eyeglass Holder

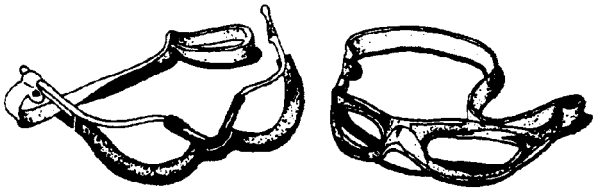

Figure B-6. Eye Protectors

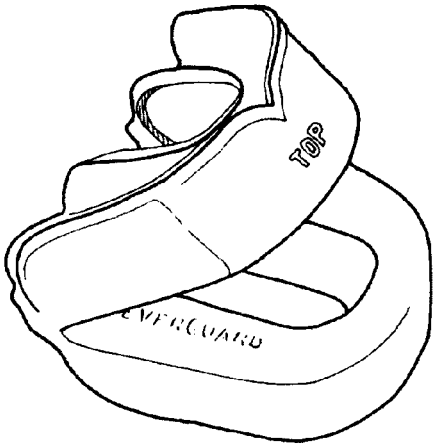

Figure B-7. Protector, Teeth

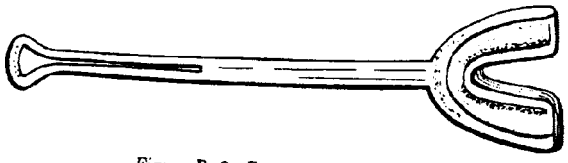

Figure B-8. Protector, Teeth

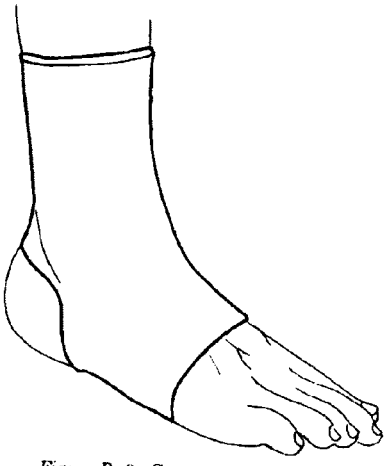

Figure B-9. Supporter, Ankle

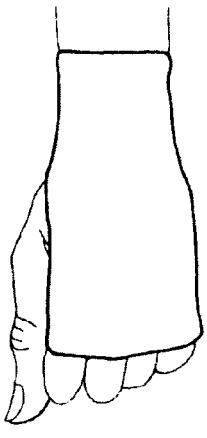

Figure B-10. Glove, Football

Figure B-4 THROUGH B-10. Eyeglass Protector; Eyeglass Holder; Eye Protectors; Protector, Teeth; Protector, Teeth; Supporter, Ankle; Glove, Football

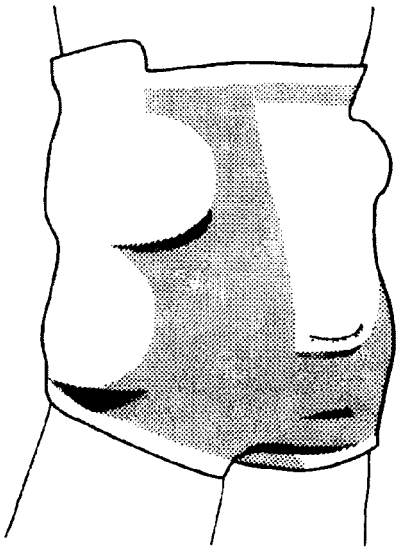

Figure B-11. Pad, Girdle

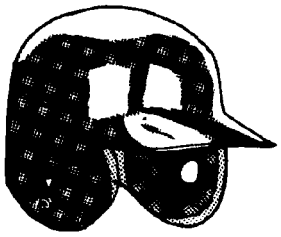

Figure B-12. Batting Helmet

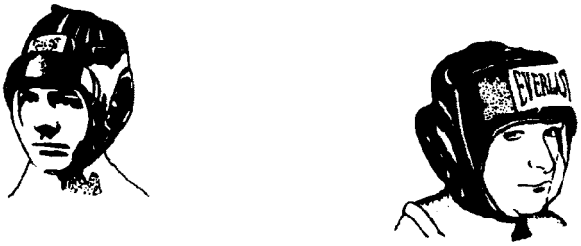

Figure B-13. Protector, Head

Figure B-11 THROUGH B-13. Pad, Girdle; Batting Helmet; Protector, Head

Appendix C
OUTDOOR SPORTS AND RECREATIONAL INFORMATION SOURCES

C–1. Outdoor Recreation (General).

a. National Recreation and Parks Association
1700 Pennsylvania Avenue, NW
Washington, DC 20006

b. Bureau of Outdoor Recreation
Department of the Interior
Washington, DC 20240

C–2. Outdoor Recreation (Specific).

a. Archery. National Archery Association
Mr.Clayton Shenk, Executive Director
1951Geraldson Drive
Lancaster, PA 17601

b. Rifle. National Rifle Association
1600 Rhode Island Avenue NW
Washington, DC 20036

c. Sky Diving. United States Parachute Association
P.O. Box 109
Monterey, CA 93940

Federal Aviation Administration
Department of Transportation
Washington, DC 20036

d. Motorcycling. Motorcycle Safety Foundation
6755 Elkridge Landing Road
Linthicum, MD 21090

e. Swimming. American Red Cross
(Consult phone books for local contacts.)

f. Boating. US Coast Guard

C–3. All safety.

National Safety Council
444 N. Michigan Avenue
Chicago, IL 60611

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